



*Image* *AFV* *2875*  
**PATENT**  
Attorney Docket No. 401465/M&C

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

Yan Keung Stanley TANG

Art Unit: 2875

Application No. 09/988,247

Examiner: J. Ward

Filed: November 19, 2001

For: **BATTERY-OPERATED LIGHTING  
DEVICE**

**TRANSMITTAL OF  
APPELLANT'S APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR 1.192, appellant hereby submits Appellant's Brief on Appeal in triplicate.

The items checked below are appropriate:

**1. Status of Appellant**

This application is on behalf of ☒ other than a small entity or ☐ a small entity.

**2. Fee for Filing Brief on Appeal**

Pursuant to 37 CFR 1.17(c), the fee for filing the Brief on Appeal is for: ☒ other than a small entity or ☐ a small entity.

**Brief Fee Due** \$330.00

**3. Oral Hearing**

☐ Appellants request an oral hearing in accordance with 37 CFR 1.194.

**4. Extension of Time**

☐ Appellants petition for a one-month extension of time under 37 CFR 1.136, the fee for which is \$110.00.

- ☒ Appellant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that appellant has inadvertently overlooked the need for a petition and fee for extension of time.

**Extension fee due with this request: \$**

**5. Total Fee Due**

The total fee due is:

Brief on Appeal Fee	\$330.00
Request for Oral Hearing	\$ 0.00
Extension Fee (if any)	\$ 0.00

**Total Fee Due: \$330.00**

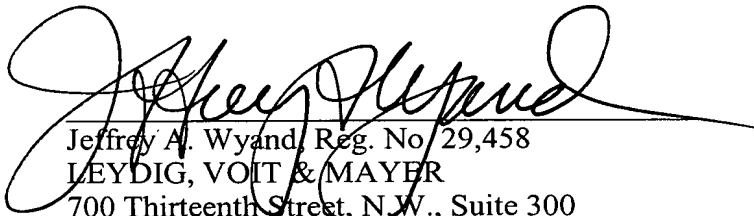
**6. Fee Payment**

- ☐ Attached is a check in the sum of \$ .
- ☒ Charge Account No. 12-1216 the sum of \$330.00. A duplicate of this transmittal is attached.

**7. Fee Deficiency.**

- ☒ If any additional fee is required in connection with this communication, charge Account No. 12-1216. A duplicate copy of this transmittal is attached.

Respectfully submitted,

  
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Date: April 5, 2004  
JAW:js



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Dear Sir:

Further to the Notice of Appeal filed March 2, 2004, Applicant now submits his Appeal Brief.

*Real Party In Interest*

The patent application that is the subject of this appeal is assigned to Techtronic Industrial Co. Ltd., of Hong Kong.

*Related Appeals and Interferences*

There are no appeals or interferences that may be affected by or that may affect this Appeal.

*Status of Claims*

As filed, the application contained claims 1-10. In the course of prosecution, no claims were cancelled and claims 11-13 were added. In an amendment after final rejection, claims 6-8 were cancelled. Because the Amendment after final rejection has been entered, claims 1-5 and 9-13 are now pending. Claims 9 and 11-13 are allowed. Claims 1-5 and 10 are finally rejected. The rejected claims 1-5 and 10 appear in the Appendix.

*Status of Amendments*

An Amendment after final rejection was filed on December 31, 2003. According to a first Advisory Action mailed January 26, 2004, the Amendment after final rejection would not be entered, but amended claims 9-13 would be allowed if the other claims were cancelled. Clearly, this statement was incorrect since claim 10, as mentioned, depended from claim 1 and not from claim 9.

Upon reconsideration, a second Advisory Action was mailed on March 9, 2004, after the filing of the Notice of Appeal. The second Advisory Action indicated that upon the filing of a Notice of Appeal, the amendment would be entered, claims 9-13 would be allowed, claims 1-5 would remain rejected, and claims 6-8 would be withdrawn from consideration. This statement of the status of the claims is clearly incorrect. It is apparent the Examiner intended to state that upon entry of the Amendment claims 1-5 and 10 would remain rejected and that claims 9 and 11-13 would be allowed. No reference would be necessary to claims 6-8 since those claims were cancelled upon entry of the Amendment.

This Appeal Brief presumes that the Amendment after final rejection is entered, that claims 9 and 11-13 are now allowed, and that all other remaining claims, claims 1-5 and 10, are rejected. It is that rejection which is appealed.

*Summary of Invention*

The invention in its most general form concerns a flashlight that, unlike conventional flashlights, does not operate from a single battery voltage. Rather, the flashlight accommodates batteries having a variety of nominal battery voltages, typically rechargeable batteries. The flashlight includes an electronic regulating circuit that regulates whatever voltage is provided by the battery connected to the flashlight to the fixed operating voltage of the bulb of the flashlight. The voltage regulating circuit ensures that the flashlight provides light that is not too dim, for example, when the nominal battery voltage is lower than the fixed operating voltage of the light bulb, by boosting the battery voltage to the fixed operating voltage of the bulb and applying the boosted voltage to the bulb. Likewise, when the nominal voltage of the battery connected to the flashlight exceeds the fixed operating voltage of the light bulb, the electronic voltage regulating circuit reduces the voltage output by the battery to the fixed operating voltage of the light bulb and applies the reduced voltage to the bulb.

The claimed flashlight is particularly useful at work sites where various tools driven by rechargeable batteries may be present. The flashlight allows the connection of whatever rechargeable battery is available at the site, and that is currently charged, the flashlight without producing an unacceptably dim light when a relatively low voltage battery is employed and without unduly shortening the lifetime of the bulb when a relative high voltage battery is used.

Turning to the description in the patent application of the illustrated embodiment and the language of claim 1, the figures illustrate a battery-operated lighting device with a casing having two parts 112 and 114. In the casing part 112, there is a lighting unit 120 including a light bulb 122. The second part of the casing 114 includes a battery chamber 150 for receiving a battery that supplies electrical power for operating the light bulb. A pair of electrical contacts 135 within the battery chamber make electrical connection with respective terminals of a battery in the chamber. An electronic voltage regulating circuit 140 provides the regulation required to match the output voltage of the battery within the battery chamber to the fixed operating voltage of the light bulb. Thus, the voltage regulating circuit may, in some instances, produce an output voltage higher than the voltage of a battery within the battery chamber and, in other instances, may produce an output voltage lower than the voltage produced by a battery within the battery chamber. In still other instances, the battery output voltage and the voltage regulating circuit output voltage may be substantially the same.

#### *Issue*

Are any of claims 1-5 and 10 obvious over Hopper (U.S. Patent 5,010,454) in view of Faulk (U.S. Patent 5,945,806) and further in view of Lemke (U.S. Patent 5,859,506)?

#### *Grouping of Claims*

All of claims 1-5 and 10 stand or fall together.

#### *Argument*

The rejection. The final rejection is particularly difficult to comprehend because of its format. In earlier Office Actions, the claims were rejected as unpatentable over Hopper in view of Faulk. Lemke was cited for the first time in the final rejection. Nevertheless, the Office Action of November 3, 2003 finally rejecting claims, repeated *verbatim* the prior

rejection based solely on Hopper and Faulk. At page 5 of the Office Action, the rejection based upon Hopper and Faulk was conceded to be inadequate to meet the limitation of claim 1 because

“Hopper in view of Faulk does not disclose that the regulator circuit regulate whatever battery voltage is supplied by whichever of the battery pack is in the battery, and the chamber is connected to the input of the voltage regulating circuit to substantially the fixed operating voltage of the light bulb at the output of the voltage regulating circuit”.

To supply the missing prior art element, Lemke was cited as disclosing

“a incandescent lamp power controller comprising a regulating circuit, [that] regulates whatever battery voltage is supplied by whichever of the battery pack is in the battery, and the chamber is connected to the input of the voltage regulating circuit to substantially the fixed operating voltage of the light bulb at the output of the voltage regulating circuit (figure 2).”

As detailed below, Appellant disagrees with the characterization of Lemke. Moreover, Appellant disagrees with the characterization and alleged application of Hopper and Faulk in the rejection. For that reason, all of the three references applied are discussed.

The references. Hopper concerns a rechargeable flashlight for an automobile. A recharging tray is permanently mounted in the vehicle and connected electrically to the battery of the vehicle. Whenever the flashlight is within the base unit, the flashlight battery is being charged from the vehicle battery. The flashlight is withdrawn from the base unit for portable use outside the vehicle.

According to Hopper, the voltage of the vehicle battery can vary between 14.4 volts and 12 volts. Hopper’s apparatus includes a voltage regulator that supplies a stable 10 volts from the vehicle battery to the charging circuitry of the portable flashlight. From that disclosure, it is apparent that the nominal operating voltage of the battery of the flashlight is approximately 10 volts. Thus, unlike the invention, the flashlight described by Hopper does not provide for the use of batteries of varying voltages and does not include a regulator for regulating the voltage supplied by the batteries to the operating voltage of the bulb of the flashlight. Rather, the voltage of the flashlight battery in Hopper is matched to the operating voltage of the bulb.

Further, unlike the claimed flashlight, and contrary to the Office Action, the voltage regulating circuit 90 in Hopper, which regulates the voltage applied by the vehicle battery to the charging circuit employed to charge the battery of the flashlight, is not contained within

the flashlight itself. In fact, Hopper never describes the precise location of that regulator 90. However, it is apparent that the regulator is permanently mounted in the vehicle, like the recharging tray, and would have no function within the flashlight. The assertion to the contrary in the Official Action is simply erroneous.

Faulk cannot suggest any modification of Hopper in the direction of the claimed invention because what is disclosed by Faulk is exactly the opposite of what is achieved in the invention. Faulk is directed to eliminating a requirement in computer hardware for multiple different batteries producing different output voltages. The batteries Faulk describes provide a sustaining power supply that maintains, for example, the contents of a memory when the principal power supply is disconnected. As explained in the background section of Faulk, there are many standards employed in the computer hardware industry for such batteries in terms of battery sizes and voltages. There is no standard voltage battery for this purpose. Different manufacturers use batteries of different voltages so that a relatively large inventory of batteries is required to replace spent batteries and to repair computer hardware employing these batteries.

Faulk solves the problem of multiple non-standard batteries by employing a single standard battery that produces a fixed output voltage. This single standard battery is used in combination with a circuit that is preprogrammed and senses an externally input voltage supplied. In response to the input voltage, the circuit either steps up or steps down the fixed battery voltage of the standard battery to match the requirement of the computer hardware to which the Faulk circuitry is connected.

In relying upon Faulk, the Examiner directed attention to column 6, lines 50-58. The most pertinent part of that passage appears in lines 54-58.

A battery pack subsystem, comprising: one or more battery cells;  
and a power converter which is connected to...selectively  
decrease or increase the voltage applied to external terminals  
during discharging,....

This passage clearly summarizes the inverse relationship of Faulk and the invention. In the invention, the voltage supplied during discharging of the battery, i.e., during operation of the light bulb, is maintained essentially constant at the fixed operating voltage of the light bulb. In Faulk, during discharging, the external voltage is not constant, but is decreased or increased to meet the demand of the load.

The hypothetical combination of Hopper and Faulk fails to meet the limitations of the claims for two independent reasons. First, there is no motivation to modify Hopper with Faulk. Hopper describes a flashlight having a single rechargeable battery having a fixed

nominal output voltage for driving a light bulb. Faulk is directed to compensating for the use of a battery with a fixed nominal output voltage to drive loads having different voltage requirements. There is no common element in Hopper and Faulk to lead one of skill in the art to apply the teaching of Faulk to modify Hopper because there is no apparent advantage that would be achieved. Second, the proposed modification would not include all of the limitations of claim 1 because the voltage regulating circuit of Faulk provides variable output voltages from a battery of fixed nominal voltage, not a fixed output voltage based upon variable nominal output voltages of various batteries that may be connected to the input of the voltage regulator.

Lemke, the third reference, simply does not supply the elements of claim 1 that are missing from any potential combination of Hopper and Faulk. Lemke concerns a flashlight and complex regulation of the power supplied from a battery to the light bulb of the flashlight. Most of the features of this power regulation of Lemke are not relevant to the invention as defined by claim 1. Lemke describes gradually applying electrical power to a light bulb at the time the light bulb is first turned on, i.e., at power-up, and maintaining a constant root mean square (RMS) voltage on the light bulb during operation. Further, Lemke describes modulating light output when the battery voltage begins to decline, as the battery approaches the end of its life. The purpose of citing Lemke, according to the Office Action, is that Lemke describes a regulating circuit that “regulates whatever battery voltage is supplied by whichever of the battery pack is in the battery...to substantially the fixed operating voltage of the light bulb at the output of the voltage regulating circuit.” Lemke’s Figure 2 was cited. That figure shows a schematic diagram of a voltage regulating circuit that controls an electronic switch connecting a battery 1 to a lamp 2.

Lemke describes flashlight batteries in general, making extensive references to manganese alkaline batteries and their characteristics. However, there is no passage in Lemke that describes the possibility of using batteries of different nominal output voltages to power the same light bulb through use of the power regulating circuitry disclosed by Lemke. In other words, contrary to the assertion of the Office Action, Lemke never describes regulating a battery voltage no matter which of the multiple battery packs having different battery voltages is connected to the regulating circuit for powering a light bulb. What Lemke does describe is connecting a battery having a nominal output voltage matched to the voltage of the light bulb driven by the battery and, subsequently, regulating the output of that battery to control, separately, the initial illumination of the light bulb, the continuous operation of the light bulb thereafter, and compensation for dimming light as the battery voltage declines. The principal focus of the regulation provided by the circuitry described by Lemke is not even the voltage applied to the light bulb or the current flowing through the light bulb.



Rather, it is the power applied to the lamp. “The average power drawn from the battery 1 remains relatively constant over the useable voltage range of the battery 1 as the increase in average current drawn from the battery 1 compensates for the battery 1 voltage reduction.” Lemke at column 8, lines 58-62. Lemke’s power output regulator does not and cannot suggest the voltage regulating circuit of the light device of claim 1.

Lemke’s smart battery extends light bulb life by providing slow starting and compensates for battery deterioration by extending the period of substantially constant light output produced as the battery ages. However, Lemke’s smart battery is not smart enough to produce an output voltage substantially matched to a fixed operating voltage of a light bulb regardless of a nominal output voltage of whichever of numerous batteries, having respective different output voltages, is connected to the Lemke circuitry to power the light bulb of a flashlight.

The rejection. The rejection is erroneous because *prima facie* obviousness has not been established based upon the asserted combination of Hopper, Faulk, and Lemke. Appellant agrees that both Hopper and Lemke concern flashlights that include many of the elements within the body of claim 1. Faulk does not concern a flashlight. None of Hopper, Faulk, nor Lemke describes the electronic voltage regulating circuit of the final paragraph of claim 1. Even assuming that it would be proper to modify Hopper with either or both of Faulk or Lemke, the structure of the final paragraph of claim 1 could not be produced. Of the three references applied, only Lemke apparently describes a voltage regulating circuit that may be within the casing of the flashlight. The regulating circuit in Hopper that regulates the voltage from the vehicle battery that is supplied to recharge the batteries of the flashlight has no relationship to the voltage regulating circuit of claim 1. The voltage regulating circuit of Faulk regulates an output voltage based upon a fixed input voltage, just the opposite the voltage regulating circuit of claim 1. The power regulating circuit of Lemke regulates an output power supplied to a light bulb based upon the operating phase of the light bulb, i.e., start-up, continuous operation, and operation as the battery deteriorates. Lemke’s regulator has no ability to control an output voltage when the battery voltage is arbitrary and may be any of a number of different voltages because of the use of different batteries with different nominal output voltages.

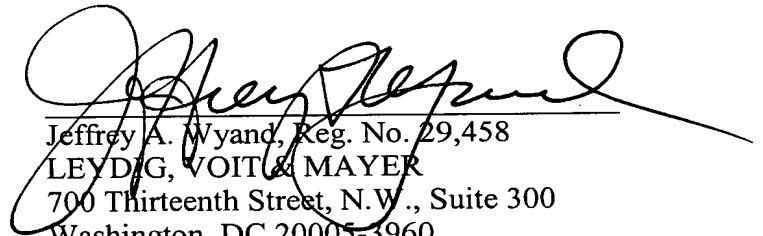
The most fundamental requirement for establishing *prima facie* obviousness of a claim is that every element of the claim must be shown in the prior art. That fundamental requirement has not been met in the rejection for want of showing that the electronic voltage regulating circuit is in the prior art. The second essential element for establishing *prima facie* obviousness is motivation for modifying a primary prior art publication with a secondary prior art publication to produce the invention claimed. Even if all of the elements of claim 1

had been found in some potential combination of Hopper, Faulk, and Lemke, no motivation for making any combination of these patents has been established. There is no common thread uniting the three publications and even the two publications that relate to flashlights, Hopper and Lemke, are directed to two such totally different objectives that they cannot teach in the direction of the invention. Neither essential element of *prima facie* obviousness has been established. Therefore, the rejection cannot be sustained.

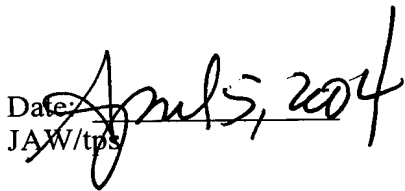
*Summary*

Since *prima facie* obviousness has not been established, the rejection of claims 1-5 and 9 must be reversed.

Respectfully submitted,



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Date:   
JAW/tps

## APPENDIX

1. A battery-operated lighting device for use with any one of a plurality of rechargeable battery packs, each battery pack having a pair of terminals and producing a respective, different battery voltage, said battery-operated lighting device comprising:

a casing having first and second casing parts,

a lighting unit including a light bulb located at said first casing part, said light bulb having a fixed operating voltage,

a battery chamber located at said second casing part for receiving at least part of and locating any of the battery packs,

a pair of electrical contacts located in said battery chamber for making electrical connection with respective terminals of whichever of the battery packs is located in said battery chamber, and

an electronic voltage regulating circuit within said casing and having an input and an output electrically connected to said electrical contacts and said light bulb, respectively, said voltage regulating circuit regulating whatever battery voltage is supplied by whichever of the battery packs is in said battery chamber and connected to said input of said voltage regulating circuit to substantially the fixed operating voltage of said light bulb at said output of said voltage regulating circuit, for operating said light bulb.

2. The battery-operated lighting device as claimed in claim 1, wherein the chamber has an opening through which a part of any of the battery packs is insertable into said battery chamber, said opening having a periphery with a shape and size substantially the same as the part of any of the battery packs for locating any of the battery packs in said battery chamber.

3. The battery-operated lighting device as claimed in claim 2, wherein said casing has an outer surface forming said battery chamber and lying substantially flush with any of the battery packs when located in said battery chamber.

4. The battery-operated lighting device as claimed in claim 1, wherein said casing has a lower end forming part of said battery chamber, said battery chamber having a bottom opening through which a part of any of the battery packs is insertable into said battery chamber, a battery pack in and protruding from said battery chamber acting as a weighted base for said battery-operated lighting device.

5. The battery-operated lighting device as claimed in claim 4,  
wherein said casing has an upper end that supports said lighting unit and a middle section  
including a handgrip.

10. The battery-operated lighting device as claimed in claim 1,  
wherein the fixed operating voltage of said light bulb is substantially 9.3V DC.

Appeal\_Brief (Revised 5/1/03)